REMARKS

Attached is a marked-up version of the changes being made by the current amendment.

Applicant submits that all claims are in condition for allowance, which action is requested.

Applicant asks that all claims be examined. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the specification:

The following has have been inserted between lines 3 and 4 on page 1:

Cross-Reference to Related Applications

This is a continuation of U.S. patent application serial no. 09/441,201, filed November 16, 1999, which is a continuation of U.S. patent application serial no. 08/774,107, filed December 24, 1996, now U.S. Patent No. 5,998,759.

Paragraph beginning at page 19, line 18 has been amended as follows:

As has been mentioned above, in the embodiment of Fig. 5, a conventional laser 10 with a very short pulse width, designed to maintain this pulse width over a substantial range of laser repetition rates, is introduced into a system that includes a wavelength shifter 12. The conventional laser 10 at 1.064 microns or 1.047 microns typically has a very high gain and can be easily designed to develop the requisite short pulse. A laser configured to intrinsically have the longer wavelength, such as the 1.32-micron wavelength of YAG or YLF, would have intrinsically low gain and hence will have a pulse width much longer than desired. The [Nd:VO_4] **Nd:VO_4** (vanadate) laser 10 has very high gain and constant pulse width at high repetition rates operating at 1.064 microns. The wavelength shifter 12 (such as a stimulated Raman scattering laser) can shift the wavelength to beyond the absorption edge of silicon without increasing the laser pulse width.

Paragraph beginning at page 20, line 27 has been amended as follows:

Let us examine the laser aspects that make up the single pass gain. It is dependent upon the power density of the light source used to "pump" the laser, the efficiency of conversion of this power to useful laser output, and the material characteristics of the lasing medium. The relationship is given as follows:

$$\text{Gain} = EP/[I_{sat}(A_{pump}+A_{mode})]$$

where [η] **E** is the efficiency of conversion of pump light to laser output, P is the pump power (i.e., the effective power delivered by the laser diode), I_{sat} is a material parameter dependent on

the laser material and its doping, A_{pump} is the cross-sectional area covered by the pump beam in the laser rod, and A_{mode} is the cross-sectional area of the laser mode within the laser rod.

Paragraph beginning at page 24, line 25 has been amended as follows:

Fig. 9 shows the [repetition rate] **pulse width** for the three different materials as a function of repetition rate. Not only does the YVO_4 (vanadate) have the shortest pulse width, but it maintains this pulse width over a very wide range.